

WHAT IS CLAIMED IS:

1 1. For use in a wireless communication network comprising at
2 least one base station and a plurality of mobile stations, an
3 apparatus for providing concurrent data transmissions from said
4 base station to said plurality of mobile stations, said apparatus
5 comprising:

6 a register unit in a base transceiver station of said base
7 station, said register unit capable of causing data packets of a
8 first data call to be concurrently transmitted during at least one
9 subframe of a data frame comprising N subframes.

1 2. The apparatus as set forth in Claim 1 wherein said
2 register unit is capable of causing data packets of a second data
3 call to be transmitted during at least one subframe of said data
4 frame comprising N subframes other than said subframe used by said
5 first data call.

1 3. The apparatus as set forth in Claim 2 wherein said data
2 packets of said second data call comprise an emergency message.

1 4. The apparatus as set forth in Claim 1 wherein said
2 register unit is capable of causing data packets of a first data
3 call to be concurrently transmitted during a first subframe of a
4 data frame comprising three subframes.

1 5. The apparatus as set forth in Claim 4 wherein said
2 register unit is capable of causing data packets of a second data
3 call to be transmitted during one of: a second subframe of said
4 data frame and a third subframe of said data frame.

1 6. The apparatus as set forth in Claim 5 wherein said data
2 packets of said second data call comprise an emergency message.

1 7. The apparatus as set forth in Claim 1 wherein said
2 register unit comprises:

3 a register main unit capable of receiving from said base
4 transceiver station a plurality of data packets to be transmitted
5 to a plurality of cell sectors, and capable of identifying a cell
6 sector destination for each of said plurality of data packets;

7 a register location unit coupled to said register main unit,
8 said register location unit capable of providing to said register
9 main unit information concerning said plurality of data packets;
10 and

11 a plurality of buffers coupled to said register main unit,
12 each of said plurality of buffers associated with a cell sector,
13 each of said buffers capable of receiving data packets from said
14 register main unit to be transmitted to a respective cell sector.

1 8. The apparatus as set forth in Claim 7 wherein each buffer
2 of said plurality of buffers is capable of storing a portion of
3 data packets of a first data call in at least one subframe of a
4 data frame comprising N subframes, and capable of causing said
5 portion of data packets of said first data call to be concurrently
6 transmitted by an antenna.

1 9. The apparatus as claimed in Claim 8 wherein each buffer
2 of said plurality of buffers is capable of storing a portion of
3 data packets of a second data call in at least one subframe of said
4 data frame comprising N subframes other than said subframe used by
5 said first data call.

1 10. The apparatus as set forth in Claim 9 wherein said data
2 frame comprises three subframes and said plurality of buffers
3 comprises three buffers.

11. A wireless communication network comprising:
a plurality of mobile stations;
at least one base station capable of communicating with said plurality of mobile stations;
wherein said at least one base station comprises an apparatus for providing concurrent data transmissions from said base station to said plurality of mobile stations, said apparatus comprising:
a register unit in a base transceiver station of said base station, said register unit capable of causing data packets of a first data call to be concurrently transmitted during at least one subframe of a data frame comprising N subframes.

12. The wireless communication network as claimed in Claim 11 wherein said register unit is capable of causing data packets of a second data call to be transmitted during at least one subframe of said data frame comprising N subframes other than said subframe used by said first data call.

13. The wireless communication network as set forth in Claim 12 wherein said data packets of said second data call comprise an emergency message.

1 14. The wireless communication network as set forth in
2 Claim 11 wherein said register unit is capable of causing data
3 packets of a first data call to be concurrently transmitted during
4 a first subframe of a data frame comprising three subframes.

1 15. The wireless communication network as set forth in
2 Claim 14 wherein said register unit is capable of causing data
3 packets of a second data call to be transmitted during one of:
4 a second subframe of said data frame and a third subframe of said
5 data frame.

1 16. For use in a wireless communication network comprising at
2 least one base station and a plurality of mobile stations, a method
3 for providing concurrent data transmissions from said base station
4 to said plurality of mobile stations, said method comprising the
5 steps of:

6 providing a register unit within a base transceiver station of
7 said at least one base station; and

8 causing data packets of a first data call in said register
9 unit to be concurrently transmitted during at least one subframe of
10 a data frame comprising N subframes.

1 17. The method as set forth in Claim 16 further comprising
2 the step of:

3 causing data packets of a second data call in said register
4 unit to be transmitted during at least one subframe of said data
5 frame comprising N subframes other than said subframe used by said
6 first data call.

1 18. The method as set forth in Claim 17 wherein said data
2 packets of said second data call comprise an emergency message.

1 19. The method as set forth in Claim 16 further comprising
2 the step of:

3 causing data packets of a first data call to be concurrently
4 transmitted during a first subframe of a data frame comprising
5 three subframes.

1 20. The method as set forth in Claim 19 further comprising
2 the step of:

3 causing data packets of a second data call to be transmitted
4 to one of: a second subframe of said data frame and a third
5 subframe of said data frame.